PEDR27V6302L-02-01
Issue Date: Dec. 15, 2005

OKI Semiconductor

MR27V6302L Preliminary

4M–Word × 16–Bit or 8M–Word × 8–Bit P2ROM (with 32–Word × 16–Bit or 64–Word × 8–Bit ID block)

GENERAL DESCRIPTION

The MR27V6302L is a 64Mbit Production Programmed Read Only Memory (P2ROM) with 64 bytes ID block. It offers capability for unique ID in each P2ROM. It is ideal for applications that require storage common data and unique ID in each device.

FEATURES

· 4M-word × 16-bit / 8M-word × 8-bit electrically switchable configuration
· 3.0 V to 3.6 V power supply
· Access time 80 ns MAX
· Operating current 20 mA MAX (5MHz)
· Standby current 10 µA MAX
· Input/Output TTL compatible
· Three-state output

PACKAGES

· MR27V6302L-xxxMA
44-pin plastic SOP (SOP44-P-600-1.27-K)
· MR27V6302L-xxxTN
48-pin plastic TSOP (TSOP I 48-P-1220-0.50-1K)

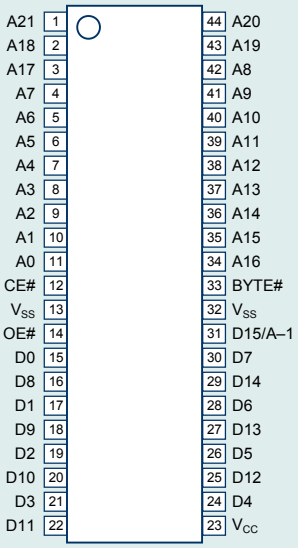
MEMORY ORGANIZATION

· P2ROM block: 000000 - 3FFBFF (16bit)
000000 - 7FF7FF (8bit)

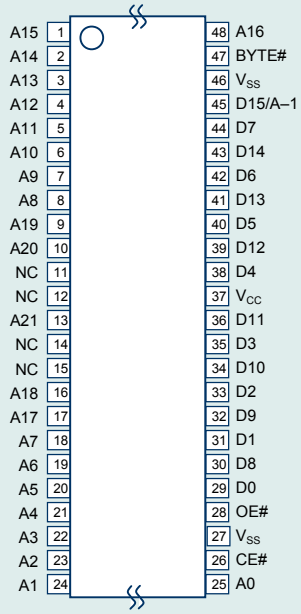
· ID block :
3FFFE0 - 3FFFFF (16bit)
7FFFC0 - 7FFFFF (8bit)

· Following address is pre-programmed with OKI test data for screening purpose.
3FFC00 - 3FFFDF (16bit)
7FF800 - 7FFFBF (8bit)

PIN CONFIGURATION (TOP VIEW)



44SOP



48TSOP(Type-I)

ID DESCRIPTION

· ID is generated by Oki and pre-programmed in ID block by OKI. ID block is 64 bytes long.
· It offers capability for unique ID in each P2ROM.
· ID composition:

(x16bit)

ID block adress	00-16	Oki serial no.
ID block adress	17-1F	reserved (no data)

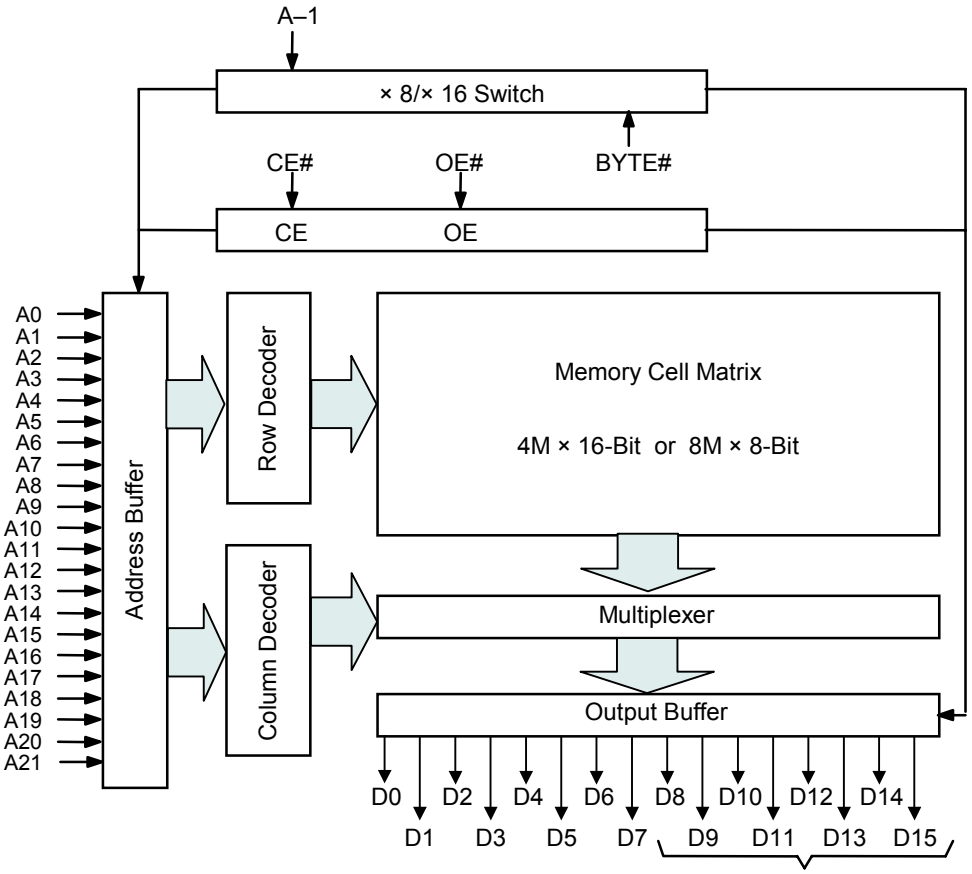
(x8bit)

ID block adress	00-2D	Oki serial no.
ID block adress	2E-3F	reserved (no data)

NOTES:

· Missing number is allowed.
Missing number may occur in production (e.g. appearance inspection, etc).
· To identify ID data programmed, please do reading operation.
This device will be shipped in tray or other packing forms. ID cannot be identified visually (e.g. by position in tray, marking, etc). Therefore, please do reading operation to identify ID.
· About additional ID programming charge and lead-time, please contact our sales.

BLOCK DIAGRAM



In 8-bit output mode, these pins are placed in a high-Z state and pin D15 functions as the A-1 address pin.

PIN DESCRIPTIONS

Pin name	Functions
D15 / A–1	Data output / Address input
A0 to A21	Address inputs
D0 to D14	Data outputs
CE#	Chip enable input
OE#	Output enable input
BYTE#	Word / Byte select input
V_{CC}	Power supply voltage
V_{SS}	Ground
NC	No connect

FUNCTION TABLE

	Mode	CE#	OE#	BYTE#	Address	V_{CC}	D0 to D7	D8 to D14	D15/ A–1
P2ROM	Read (16-Bit)	L	L	H	000000 - 3FFBFF (16bit)	3.3V	D_{OUT}		
	Read (8-Bit)	L	L	L	000000 - 7FF7FF (8bit)		D_{OUT}	Hi–Z	L/H
ID	Read (16-Bit)	L	L	H	3FFFE0 - 3FFFFF (16bit)		D_{OUT}		
	Read (8-Bit)	L	L	L	7FFFC0 - 7FFFFF (8bit)		D_{OUT}	Hi–Z	L/H
Output disable		L	H	H	*		Hi–Z		
				L					*
Standby		H	*	H	*		Hi–Z		
				L					*

*: Don't Care (H or L)

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Condition	Value	Unit
Operating temperature under bias	Ta	—	0 to 70	°C
Storage temperature	Tstg		–55 to 125	°C
Input voltage	V_I	relative to V_{SS}	–0.5 to V_{CC}+0.5	V
Output voltage	V_O		–0.5 to V_{CC}+0.5	V
Power supply voltage	V_{CC}		–0.5 to 5	V
Power dissipation per package	P_D	Ta = 25°C	1.0	W
Output short circuit current	I_{OS}	—	10	mA

RECOMMENDED OPERATING CONDITIONS

(Ta = 0 to 70°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
V_{CC} power supply voltage	V_{CC}	V_{CC} = 3.0 to 3.6 V	3.0	—	3.6	V
Input "H" level	V_{IH}		2.2	—	V_{CC}+0.5*	V
Input "L" level	V_{IL}		–0.5**	—	0.6	V

Voltage is relative to V_{SS}.
* : Vcc+1.5V(Max.) when pulse width of overshoot is less than 10ns.
** : -1.5V(Min.) when pulse width of undershoot is less than 10ns.

PIN CAPACITANCE

(V_{CC} = 3.3 V, Ta = 25°C, f = 1 MHz)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input	C_{IN1}	V_I = 0 V	—	—	12	pF
BYTE#	C_{IN2}		—	—	200	
Output	C_{OUT}	V_O = 0 V	—	—	12	

ELECTRICAL CHARACTERISTICS

DC Characteristics

(V_{CC} = 3.0 V to 3.6 V, Ta = 0 to 70°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input leakage current	I_{LI}	V_I = 0 to V_{CC}	—	—	10	µA
Output leakage current	I_{LO}	V_O = 0 to V_{CC}	—	—	10	µA
V_{CC} power supply current (Standby)	I_{CCSC}	CE# = V_{CC}	—	—	10	µA
	I_{CCST}	CE# = V_{IH}	—	—	1	mA
V_{CC} power supply current (Read)	I_{CCA}	CE# = V_{IL}, OE# = V_{IH} f=5MHz	—	—	20	mA
Input "H" level	V_{IH}	—	2.2	—	V_{CC}+0.5*	V
Input "L" level	V_{IL}	—	–0.5**	—	0.6	V
Output "H" level	V_{OH}	I_{OH} = –1 mA	2.4	—	—	V
Output "L" level	V_{OL}	I_{OL} = 2 mA	—	—	0.4	V

Voltage is relative to V_{SS}.

* : Vcc+1.5V(Max.) when pulse width of overshoot is less than 10ns.

** : -1.5V(Min.) when pulse width of undershoot is less than 10ns.

AC Characteristics

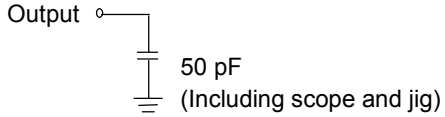
(V_{CC} = 3.0 V to 3.6 V, Ta = 0 to 70°C)

Parameter	Symbol	Condition	Min.	Max.	Unit
Address cycle time	t_C	—	80	—	ns
Address access time	t_{ACC}	CE# = OE# = V_{IL}	—	80	ns
CE# access time	t_{CE}	OE# = V_{IL}	—	80	ns
OE# access time	t_{OE}	CE# = V_{IL}	—	30	ns
Output disable time	t_{CHZ}	OE# = V_{IL}	0	20	ns
	t_{OHZ}	CE# = V_{IL}	0	20	ns
Output hold time	t_{OH}	CE# = OE# = V_{IL}	0	—	ns

Measurement conditions

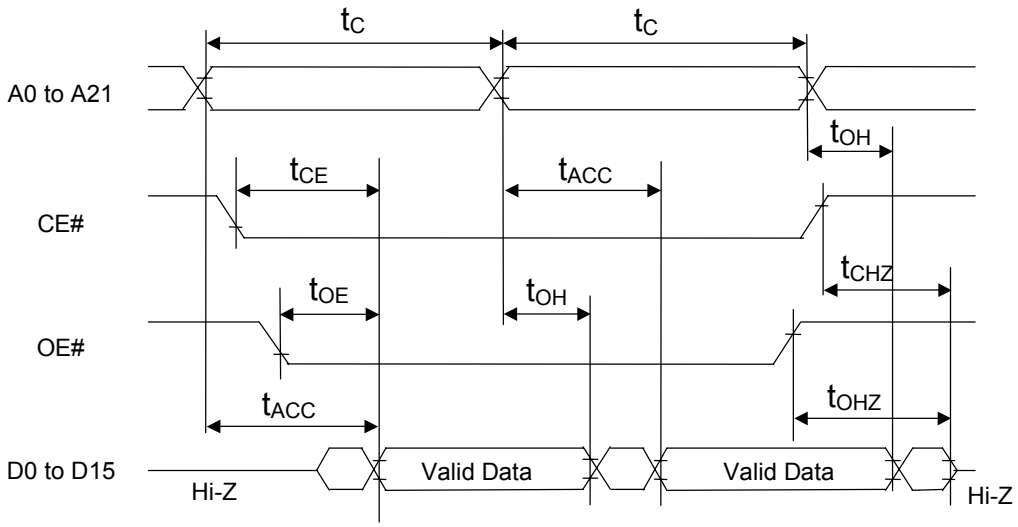
Input signal level ----------0 V/3 V
Input timing reference level----------1/2Vcc
Output load ----------50 pF
Output timing reference level ---------- 1/2Vcc

Output load

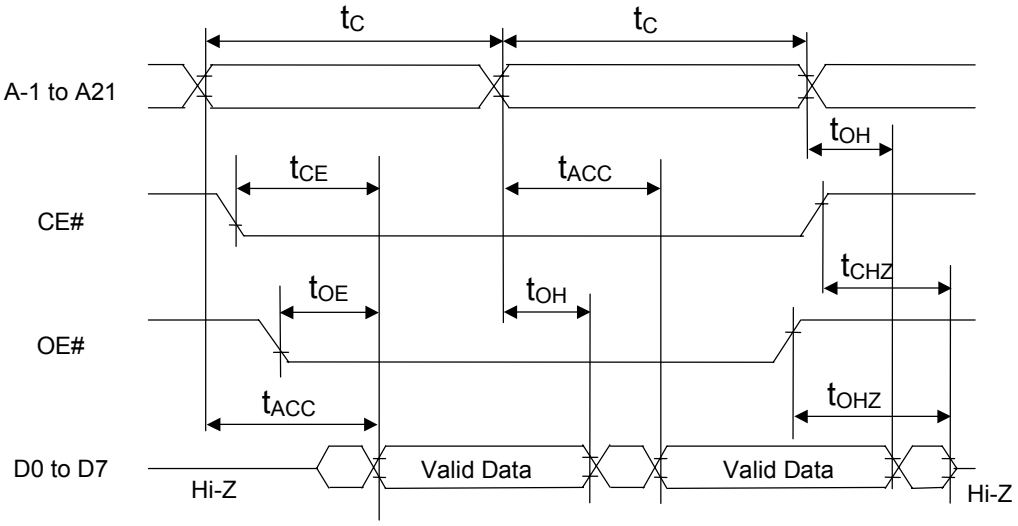


TIMING CHART (READ CYCLE)

16-BIT READ MODE (BYTE# = V_{IH})



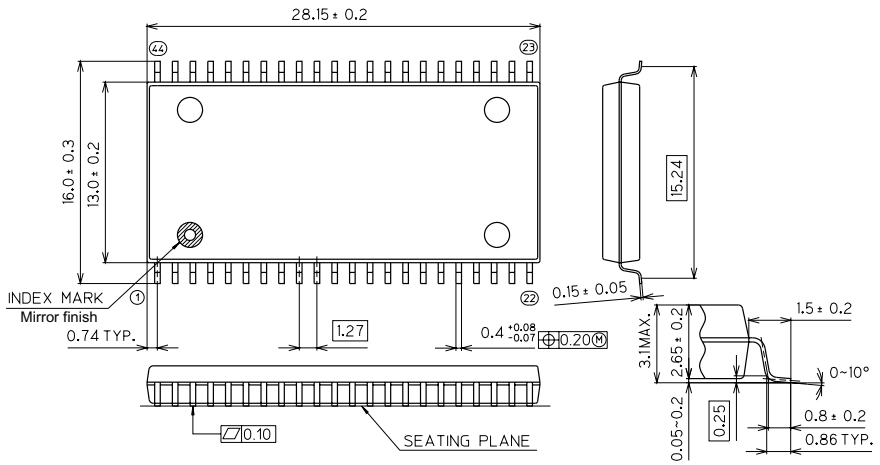
8-BIT READ MODE (BYTE# = V_{IL})



PACKAGE DIMENSIONS

(Unit: mm)

SOP44-P-600-1.27-K



Package material	Epoxy resin
Lead frame material	42 alloy
Pin treatment	Solder plating (≥5μm)
Package weight (g)	2.10 TYP.
Rev. No./Last Revised	4/Dec. 5, 1996

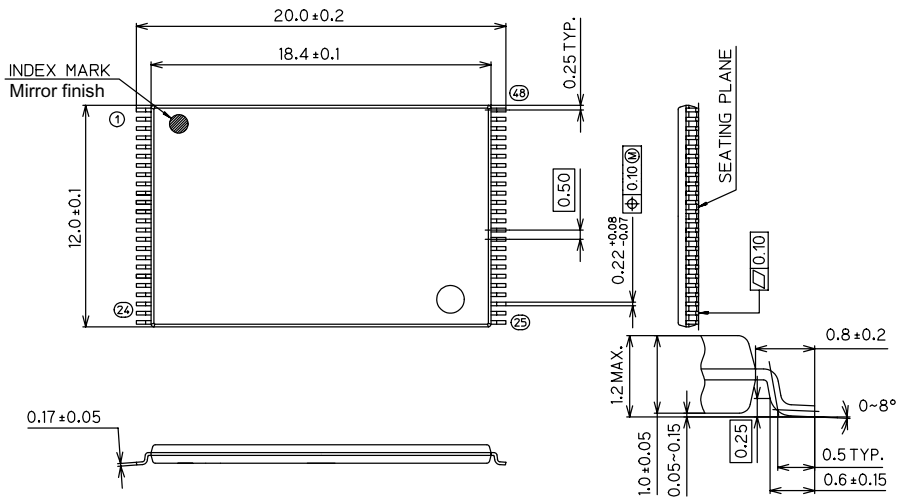
Oki Electric Industry Co., Ltd.

Notes for Mounting the Surface Mount Type Package

The surface mount type packages are very susceptible to heat in reflow mounting and humidity absorbed in storage.
Therefore, before you perform reflow mounting, contact Oki's responsible sales person for the product name, package name, pin number, package code and desired mounting conditions (reflow method, temperature and times).

(Unit: mm)

TSOP(1)48-P-1220-0.50-1K



Package material	Epoxy resin
Lead frame material	42 alloy
Pin treatment	Solder plating (≥5μm)
Package weight (g)	0.55 TYP.
Rev. No./Last Revised	1/Dec. 2, 1999

Oki Electric Industry Co., Ltd.

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REVISION HISTORY

Document No.	Date	Page		Description
		Previous Edition	Current Edition	
PEDR27V6302L-02-01	Dec. 15, 2005	–	–	Preliminary edition 1

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